Using socioeconomics to counter health disparities arising from the covid-19 pandemic

Using a Socio-Economic Status Related Health Disparities Lens to Monitor and Mitigate the Impact of the COVID-19 Pandemic

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Introduction

Worldwide, countries are responding to the COVID-19 pandemic. Epidemiological models have shown that without interventions to contain the spread of the virus, countries would face an exponential increase in COVID-19 cases (1). Although a majority of those cases will be mild, a meaningful minority would fall seriously ill, potentially overwhelming hospitals and resulting in a sharp increase in deaths. These scenarios have led many countries to adopt a variety of measures aimed at "flattening the curve" to avoid a sudden spike in COVID-19 cases. The strategies are predominately based on reducing close contact between individuals to lower the chances of transmission. However, as a recent analysis (2) points out, social distancing strategies could have profound effects on health through a variety on mechanisms including employment, social isolation and effects on family relationships. Furthermore, there is growing concern that the poor and vulnerable will bear the brunt of both the virus and strategies to contain it (2,3). There is a pressing need to measure and mitigate differential effects of the pandemic on already-marginalized populations.

We recommend that assessments of the COVID-19 pandemic and measures to contain it be informed by well-established principles and methods that address the complex interplay between socio-economic status (SES) and health disparities. Furthermore, we argue these principles provide a typology and framework (4) to guide strategies to ease physical distancing measures as well as equitable policies to address the pandemic's long-term impacts on health and society.

The SES and Health Gradient: Principles and Methods

Years of research from many high-income countries has shown that health is related to SES in important and complex ways. The underlying principles for that research build on work done decades ago, mostly in England that argued SES-related inequalities in health are a consequence of inequalities in the social determinants of health. These social determinants include material circumstances, the social environment and psychological factors. These are in turn influenced by social position and context and shaped by a range of factors including education, income and ethnicity (5). Furthermore, these health inequities exist not only between the extremes of rich and poor, but also across every rung on the SES ladder. Marmot argues these differences are not primarily driven by income but have more to do with variations in social participation and ability to control life circumstances (6). This latter mechanism has been highlighted in more recent work by Case and Deaton in the United States who argue that loss of employment certainty and social opportunity was associated with sharp increases in deaths tied to despair, including suicides, and deaths related to alcohol and drug dependency specifically in middle-class middle-aged non-Hispanic whites (7). Recent work in Canada has used constructs of SES risks such as food insecurity and housing instability to show how these can predict future high use of health care services (8). Scotland has moved to regular reporting of SES-related health disparities using a sophisticated multi-faceted deprivation index (9). Along with research and reporting within countries, there have been studies looking at SES-related health disparities across countries (10,11).

Using the SES Health Disparities Lens to Monitor the Impacts of COVID-19 and Containment Responses

Although we have cited only a very select part of the vast literature on SES and health disparities in high-income countries, these studies highlight some key methodological themes: SES is multi-facetted and should be measured as far more than just income; SES characteristics are consistently related to a range of outcomes including disease incidence, mortality and health care utilization; this relationship often occurs as a gradient across SES levels. The SES gradient has both individual (6,7,8) and community-level (9,10,11) associations with health outcomes.

It is not difficult to imagine that the impacts of material and social deprivation that disadvantage the poor generally (e.g., lack of resources, social isolation) are also at play in this pandemic. Marginalized groups face special risks. They may be more likely to become infected due to cramped living conditions and the relative lack of resources to self-isolate and physically distance. They also have higher rates of many of the comorbidities such as hypertension and diabetes that predict bad outcomes for those who are infected. Monitoring outcomes of the pandemic and response should evaluate impacts considering both individual SES and the social determinants of the communities in which individuals live.

This type of analysis is starting to appear including a recent report from Canada that showed that people living in marginalized neighbourhoods – as measured by ethnic concentration, residential instability, material deprivation, and income – are more likely to test positive for COVID and that each of these measures appeared to have different impacts (12). Ecological analyses like this, using postal codes linked to small area data from census data or social surveys are a powerful and cost-effective expedient approach. A key attribute of sound ecological analysis is creating local areas that reflect neighborhoods in a true community sense. For example, Scotland uses 7,000 areas that have been carefully crafted to capture neighborhoods ranging from public housing estates to wealthy enclaves to cover a population of 5.45 million (9). Individual-level data on COVID complications in disadvantaged subpopulations is just starting to appear. A recent analysis by the UK Office of National Statistics of COVID-19 death rates reveals a nearly four-fold higher mortality rates in unskilled and manual workers, compared to professionals (13). These early analyses are showing the important and varied nature of SES disparities for this new and important threat to health.

Previous SES research and the recent BMJ article on mechanisms behind the impacts of COVID containment (2), suggest that looking beyond the pandemic itself using a SES lens could identify important impacts of containment policies, including healthcare system responses. The large and sudden impacts of job loss and concerns over future employment future combined with drastic changes in social and family context (2) raise the possibility of an increase in Case and Deaton's deaths of despair (7). These deaths were primarily but not uniquely observed in the United States in the past. They are already being talked about as a potential epidemic within the pandemic in the United States (14) Violence against others such as domestic violence and child abuse may also be important SES-related markers of the impact of COVID containment (2). Longer-term material and social deprivation, combined with restricted access to health services in an increasingly hard to access and strained health and social care system, could have real impacts in terms of health care utilization and health outcomes

in populations with complex health and social care needs, such as the old, the frail, and those with multiple chronic conditions or serious mental illness and addictions (15).

In short, proper monitoring of COVID-19 through the SES lens should examine both the direct impacts of COVID-19 and the predictable health impacts of COVID-19 containment using comprehensive SES measures of material and social deprivation at both individual and ecological level. See Box 1.

Using the SES Health Disparities Lens to Guide Exit Strategies and Social Recovery

Leaders in SES health research have made a point of describing the policy implications of their work (5,6,7). Whitehead (4) has provided a typology that links the theory and measurement of SES health inequities to different levels of policy: strengthening individuals, strengthening communities, improving living and working conditions, and macro-policies addressing the broader determinants of health. This typology should be used to inform exist strategies and guide investments to support social and economic recovery. (See Box 2.)

At the individual level, the concept of "immunity passports" has received considerable attention. Experts caution the extent and duration of protection conferred by antibodies to SARS-CoV-2 is still unclear. However, if antibodies are found to confer durable immunity, these tests will have immediate implications for who can (or cannot) resume in-person activities. Equity issues abound and careful planning around the purpose and parameters of such passports would be wise. A related issue is who will pay for these tests. Will immunity tests be sold privately or offered widely as a publicly insured service? If these become a new gatekeeper to employment, policies will be needed to ensure these tests do not exacerbate existing health disparities.

At the community-level, there have been extensive discussions around options that involve massive augmentation of capacity for testing and contact-tracing on a scale seen in countries such as South Korea, Hong Kong and Singapore. Sustaining this capacity is particularly important to control spread as physical distancing restrictions are eased. In this phase, an SES disparities lens would lead us to focus on protecting the most vulnerable members of our society such as older residents of nursing homes and long-term-care facilities (16), the homeless (17) and marginalized ethnic groups (18). These groups appear to have slipped through the cracks in the initial response in many countries and they merit special attention as the first wave of the COVID-19 epidemic recedes and subsequent waves threaten. Likewise, broad sero-surveillance studies – important in shaping outbreak management and vaccination policy – must be undertaken both at the household level and with a specific focus on marginalized populations that might otherwise be excluded.

Working conditions are another area of great interest. In Canada, employees of food processing plants were deemed essential workers. Meat packing plants, in particular, involve unattractive work in close quarters, pay low wages, and often are staffed by immigrants and persons belonging to ethno-racial minorities. In both Canada and the US, major outbreaks of COVID-19 have occurred in these facilities. These outbreaks are a bellwether for what is ahead globally as economic restrictions are lifted. As trades unions in the UK have warned (19, guidelines for employers to keep employees safe are vague and

monitoring procedures unclear. Clearly, congregate settings with common work areas such as factories create huge risks for workers; in contrast, white-collar employers can erect partitions in offices, stagger hours, limit meeting sizes, and more readily maintain some proportion of existing work-from-home arrangements.

Last, at a macro-level, many high-income countries are introducing economic measures to offset the impacts of the pandemic and its containment on the ability of citizens to afford life's necessities. Tactics vary, including subsidies to employers to prevent lay-offs, and direct payments to families to mitigate hardship. It is far from clear, however, that these policies have been tailored to ensure support for those who are most precariously employed, or those with limited means or compromised immune systems. More generally, as jurisdictions begin to ease containment measures and restore the functions of civil society, healthcare systems as well as economic activities, it is all too easy to overlook the complex interactions between SES and health. We believe these interactions warrant special attention in the challenging months ahead.

Conclusions

The epidemic curve has provided an important framework for understanding and containing the spread of COVID-19. We believe the SES health disparities gradient provides an equally important framework – one that can deepen understanding of the health equity impacts of COVID-19 and containment strategies across SES strata. Governments and population health researchers should collect detailed and meaningful on the SES distribution of both direct health impacts of the pandemic, and indirect health, social and economic impacts resulting from COVID-19 containment strategies. These data are essential for understanding the full impact of the pandemic and its distributional effects. This SES lens can also provide policymakers with useful guidance as they develop and deploy containment exit strategies and make investments to mitigate, in an equitable way, the longer-term impacts of this pandemic.

COVID-19 has made the world less healthy. Responses to it need not make the world less equitable. With careful attention to principles, methods and policy ideas that come from over two decades of research and ideas, countries can better anticipate, mitigate, and redress the health and social impacts of this pandemic—particularly on the most marginalized groups in society.

Box 1: Applying an SES Lens to Assess the Impacts of COVID-19 and COVID Containment Strategies

- Early data suggests both the incidence and impact of COVID-19 will be distributed unequally across those with different levels of material and social deprivation. A broad-based SES-lens approach is needed to understand and address these impacts.
- Strategies to contain COVID-19 are dramatically affecting key social determinants of health such as employment, social interaction and family relationships. This will likely lead to poorer mental health and increased deaths of despair and domestic violence, all of which should be closely monitored.
- People with complex needs, vulnerable populations, and marginalized groups are at increased risk from COVID-19 and COVID containment strategies. Timely, reliable data is needed to identify these individuals and they are properly supported.
- Create or take advantage of existing multi-dimensional SES deprivation indices that use census of population-based surveys at appropriately defined community levels to support ecological analyses. Often postal code information on health use or outcomes data sources can be used to assign individuals with relevant outcomes to these communities
- A related priority should be to look carefully at the data routinely collected at the individual level for important outcomes that can be used to look at SES disparities with a willingness to invest in new forms of individual level SES data that can guide efforts to protect and support those at risk or who have been disproportionately burdened

Box 2: Using Health-Wealth Gradients to Guide Strategies for Containment and Social Recovery

Policies aimed at individuals such as immunity passports should take into account the disparities in health benefits of being able to return to society across SES and be implemented with careful attention to both equitable access to testing and measures required to mitigate the SES differences in financial and social advantages accruing to those who are shown to be immune.

Policies aimed at protecting communities through specific isolation strategies and contact tracing should be designed to protect the most vulnerable, such as resident of long-term care facilities, the homeless, and marginalized ethnic groups.

Policies addressing working conditions should mitigate differences in risk of infection by employment sector as the economy reopens, and ensure those who need jobs and whose employment is central to economic recovery are provided with adequate protection and support in the workplace

Macro-policies aimed at broad mitigation of economic impacts should include programs that provide targeted support to those most impacted and those who face greater obstacles in re-entering society (e.g., precariously employed, homeless, those with complex needs).

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